



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,213	10/22/2001	Ryan Xue	41575/29337	4971

29493 7590 06/27/2003

HUSCH & EPPENBERGER, LLC
190 CARONDELET PLAZA
SUITE 600
ST. LOUIS, MO 63105-3441

EXAMINER

BURNHAM, SARAH C

ART UNIT	PAPER NUMBER
----------	--------------

3636

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,213

Applicant(s)

XUE ET AL.

Examiner

Sarah C. Burnham

Art Unit

3636

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 12-16, 18-24, 36-38 and 41-55 is/are pending in the application.
- 4a) Of the above claim(s) 12, 13, 19-24, 36, 37 and 44-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14-16, 18, 38 and 41-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information referred to in the information disclosure statements filed on 9 April 2003 has been considered as to the merits.

Claim Objections

2. Claims 1-7 and 14-16 are objected to because of the following informalities:
 - It appears as if the word “milimeters” (claim 1, line 9) should be replaced with the word “millimeters” in order to correct a misspelling.
 - Claims 2-7 and 14-16 are objected to as being dependent upon an objected base claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-7 and 14-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure does not

Art Unit: 3636

include any description of "said second and said third positions being at least about 11 millimeters apart; wherein each of said movements is at a duration between 2 and 30 seconds" (claim 1, lines 9-10). The original disclosure states that the second and third positions are at least 4 millimeters apart, at least 8 millimeters apart and 12 millimeters apart but does not disclose anything regarding 11 millimeters. Secondly, the original disclosure states that the movements last for a duration of 5 to 25 seconds but do not disclose anything regard 2 to 30 seconds. The 11-millimeter limitation and the 2 to 30 second limitation do not appear to be critical and were not originally disclosed by the applicant.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 18 and 41-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following words/phrases lack proper antecedent basis:

- said current regulating means (claim 18, line 11; claim 18, lines 12-13)
- said driving apparatus (claim 18, line 11; claim 18, line 13; claim 18, line 14)
- said automatic moving (claim 41, lines 15-16)

Claim 42 is rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 5-7, 15-16, 18 and 43 are rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being anticipated by Benson (5,816,653). Benson discloses a flexible supporting element (12) "for use in the lumbar region of a seat" (column 3, line 31), including a drive means (or driver) (20) "adapted to change the curvature of supporting element (12) according to a predetermined adjustment cycle" (column 4, lines 1-2). The flexible supporting element (12) takes on an arched cross section and is designed to receive the pressure from a person's back leaning on the surface. The adjustment cycle includes a first movement in a first direction (30) and a second movement in a second direction "opposite arrow (30)" (column 3, line 63). A second position can be defined as a position in which apex (27) is at its most extended curvature, a third position can be defined as a position in which apex (27) is at its most flat curvature and a first position can be defined as any of an infinite number of points lying between the second and third positions. Each position is maintained for a given time period creating a pause between movements (abstract). The full range of apex (27) travel is in the range of about thirty-six (36) to about forty (40) millimeters" (column 6, lines 11-12). It can therefore be deduced that a second and third position are at least 8 mm apart and a first and second position are at least 4 mm apart.

Art Unit: 3636

Drive means (20) includes a power source (32), an electric motor (22), an output (24)(25), a control module (36), a current controller (40), a position indicator or sensor (74), a memory (76) and a stall sensor (70). A polarity switching means (42)(68) includes a polarity switch (42) and a switch controller (68). Polarity switching means (42)(68) is "adapted to selectively reverse the polarity of the electric connection between module (36) and motor (22) so as to cycle the movement of motor (22) in first and second directions" (column 5, lines 10-13). "Switch controller (68) selectively moves polarity switch (42) from and to a first position defining a first polarity connection between module (36) and motor (22) to and from a second position defining a second polarity connection" (column 5, lines 15-19).

Benson discloses that each movement lasts 5-25 seconds and each pause lasts 1 to 1.5 second (column 1, lines 40-45). The full range of travel is divided into 4 to 6 separate movements (column 6, line 15). Therefore the time required for the full range of travel (or to move from the second position to the third position) is in the range of 24 (i.e. $((5+1)*4)$) to 159 (i.e. $((25+1.5)*6)$) seconds. This range disclosed by Benson overlaps the range claimed by the Applicant and can therefore be considered anticipatory.

With respect to claim 1, Benson discloses all claimed elements except a distance of movement between second and third positions equal to at least about 11 millimeters or duration of movements between 2 and 30 seconds.

It would have been an obvious matter of design choice to modify the apparatus disclosed by Benson to have a distance of movement between second and third

Art Unit: 3636

position equal to at least about 11 millimeters and duration of movement between 2 and 30 seconds. Both are matters of design choice and the criticality of the chosen ranges is not presented in the specification.

With respect to claim 6, Benson reveals all claimed elements with the exception of a pause equal to 3 seconds and a distance between a second and third position equal to 12 millimeters.

It would have been an obvious matter of design choice to specify a pause length equal to 3 seconds and a distance between a second a third position equal to 12 millimeters. By specifying pause length and distance between second and third positions, the lumbar support is customized to meet a specific user's preferences. The Applicant does not disclose the criticality of the 3-second pause or the 12 mm distance.

9. Claim 4 is rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653) in view of Ogasawara (5,243,267). As disclosed above, Benson reveals all claimed elements with the exception of movements that are without pause.

Ogasawara (5,243,267) teaches the use of an elastic spring element to create "a continuous or smooth series of motions in the fore-and-aft direction" (column 9, lines 40-41) against a lumbar support element (28).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to add the spring element used to create a smooth and continuous motion to the lumbar support system disclosed by Benson. Such an addition would

Art Unit: 3636

create a lumbar support device that operates in a manner less noticeable or less disturbing to the seat occupant.

10. Claim 3 is rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653) in view of Hazard et al. (5,637,076). As disclosed above, Benson reveals all claimed elements with the exception of a plurality of cycles that stop automatically after a pre-configured time interval.

Hazard et al. teaches how an "automatic shut-off may be provided if a person is not sitting against the bladder 28 [i.e. flexible support element] for a selectable period of time such as for 12 seconds" (column 5, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to add the automatic shut-off capabilities taught by Hazard et al. to the lumbar support system revealed by Benson. Such an addition conserves electricity by ensuring that the device is turned off when not in use.

11. Claims 14, 38 and 41-42 are rejected as best understood with the above cited indefiniteness under 35 U.S.C. 103(a) as being unpatentable over Benson (5,816,653) in view of Schuster, Sr. et al. (6,254,187). As disclosed above, Benson reveals all claimed elements with the exception of a traction cable/traction actuator.

Schuster, Sr. et al. teaches the use of a traction element (2) connected to a flexible supporting element (8) and a drive means (22)(23). Traction element (2) is a "Bowden wire" (column 5, line 7).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use traction element (2) in place of output element (25). Such a substitution is commonly known in the art as disclosed by applicant in saying that "traction driven lumbar supports commonly have the traction applied to them through a Bowden cable" (paper number 8).

Response to Amendment / Arguments

12. The response filed on 16 April 2003 has been fully considered and remaining issues are detailed in the sections above.

Applicant argues that apparatus disclosed in the Benson reference does not meet the limitations of the claimed invention because the movements of the apparatus disclosed by Benson are short, quick and "are barely perceivable by the seat occupant" (Benson, column 2, line 20). The Examiner interprets the phrase "barely perceivable" to mean that they are perceptible, even though the movements are very slight. Also, the definitions of short and quick are broadly interpreted.

Secondly, Applicant argues that the Benson apparatus does not teach a "said second and said third positions being at least about 11 millimeters apart; wherein each of said movements is at a duration between 2 and 30 seconds" (claim 1, lines 9-10). The choice of "at least about 11 millimeters" (claim 1, line 9) for the distance between

Art Unit: 3636

said second and said third positions is purely a matter of design choice. The criticality of this number is not presented in the disclosure as originally filed. The choice of "between 2 and 30 seconds" (claim 1, line 11) for the duration of movements is also a matter of design choice. Again, the criticality of this duration is not presented in the original disclosure. Although the exact ranges as claimed may not be disclosed by Benson, because the ranges are not presented as critical dimensions, they are obviously modified by design.

Applicant argues that the movement ranges and durations recited in claim 1 define perceptible movement. It is of the Examiner's opinion that perceptible movement is a very subjective concept and varies from one person to another and therefore cannot necessarily be defined by the ranges as set forth in claim 1.

For the reasons listed above, the Benson remains properly applied to claims 1-2, 6-11, 15-18, 25-26, 29-35, 39-40 and 43. The original rejections of claims 4 and 28 over Benson (5,816,653) in view of Ogasawara (5,243,267), 3 and 27 over Benson (5,816,653) in view of Hazard et al. (5,637,076) and claims 14, 38 and 41-42 over Benson (5,816,653) in view of Schuster, Sr. et al. (6,254,187) also remain.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 3636


TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah C. Burnham whose telephone number is 703-305-7315. The examiner can normally be reached on M-Th 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 703-308-0827. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-1113.

SCB
June 26, 2003


Peter M. Cuomo
Supervisory Patent Examiner
Technology Center 3600